

**TECHNICAL ARRANGEMENT**  
**BETWEEN THE**  
**DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA**  
**AND THE**  
**MINISTER OF DEFENSE OF THE FRENCH REPUBLIC**  
**CONCERNING COOPERATION IN**  
**THE APPLICATION OF EMERGING TECHNOLOGIES**

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## Preamble

The Department of Energy of the United States of America (DOE)

and the Minister of Defense of the French Republic,

hereinafter referred to as the “Parties”

Desiring to cooperate, within their respective missions, on the development and application of emerging technologies that have the potential for improving the safety and security of their respective States;

Recognizing that DOE’s Sandia National Laboratory (SNL), for the U.S. Party, and the Centre d’Etudes de Gramat (CEG) of the Delegation Générale pour l’Armement (DGA), for the French Party, possess expertise which can contribute significantly to the initiation of an institutional relationship between the Parties and to their cooperation in the area of the application of emerging technologies;

Taking into account the General Security of Information Agreement between the Government of the United States of America and the Government of France of September 7, 1977; and

Taking further into account the Intellectual Property Rights Annex agreed to by the Government of the United States of America and the Government of the French Republic by an exchange of diplomatic notes on July 27, 1994, and June 6, 1997 (Intellectual Property Rights Annex),

THEREFORE, it is agreed as follows:

### Article 1 - Objective

1.1. The objective of this Technical Arrangement is to define and establish the general principles which apply to the development and application of emerging technologies in the areas of

1.1.1. Increasing the potential capabilities of large pulse X-ray sources in the most cost effective manner through joint activities and exchange of information in the fields of research, conception, construction, and characterization. The main challenges being:

- controlling overall **efficiency**, power conditioning and energy concentration;
- selecting the most appropriate technologies;

- developing and benchmarking the required tools; and
  - improving capability characterization through diagnostics.
- 1.1.2. Joint activities to assess the feasibility of large X-ray facilities, including conceptual design, research, cost evaluation, and preliminary engineering.
- 1.2. This cooperation shall include the exchange of calculational tools and other scientific analyses related to energy coupling to Z-pinchs and optimization of radiation fields produced by Z-pinchs in vacuum enclosures. The exchange of calculational tools for Z-pinch dynamics and radiation production will be approved on a case by case basis by the DOE and DGA points of contact. This cooperation shall exclude the exchange of calculational tools and other scientific analyses related to Z-pinch X-ray source applications to nuclear weapons physics.
- 1.3. **SNL** and CEG are expected to participate in the cooperative activities pursuant to this Technical Arrangement.

## Article 2 - Forms of Collaboration

- 2.1. The activities carried out by the Parties under this Technical Arrangement include, but are not limited to, the following:
- 2.1.1. Exchange and provision of scientific and technical information which the Parties have a right to disclose and which does not include classified information, in accordance with U.S. and French laws and regulations;
- 2.1.2. In accordance with the provisions of Article 6:
- Visits by expert teams or individuals to U.S. and French facilities;
  - Personnel assignments to U.S. and French facilities;
  - Training of scientific and technical personnel by means of fellowships or work periods in laboratories or through the organization of seminars or specific courses;
- 2.1.3. Exchange and provision of samples, materials, instruments and components for testing;
- 2.1.4. Use of unclassified facilities and equipment owned and operated by either Party;
- 2.1.5. Assistance in the purchase of items of laboratory equipment which are difficult to obtain; and

- 2.1.6. Joint tasks in which the Parties will share mutual benefit.
- 2.2. Other specific forms of collaboration as may be added by written arrangement of the Parties.
- 2.3. The Parties shall use their best efforts to perform, or have performed, the work specified under this Technical Arrangement.

### Article 3 - Management

- 3.1. Each Party shall designate a manager, from DOE and DGA respectively, to evaluate the progress of activities, to approve joint tasks, to consider and act upon new proposals for collaboration, and to exercise executive-level oversight of this Technical Arrangement. This oversight shall include a review of the achievements, problems, effectiveness, as well as an assessment of the balance of exchanges and consideration of measures to maintain a balanced exchange where a balanced exchange supports and does not detract from the cooperation.
- 3.2. Each manager shall appoint a technical point of contact who shall be responsible for coordinating and implementing all the technical tasks agreed to by the managers.
- 3.3. Joint activities under this Technical Arrangement are expected to be coordinated at the technical level, respectively in France at the CEG and in the United States at SNL.
- 3.4. The managers shall meet as determined by mutual consent, but at least annually. Decisions of the managers shall be taken jointly. To assist their decision-making, the managers may consult with technical experts.

### Article 4 - Use of Equipment and Materials

- 4.1. Any equipment or materials provided by the Parties shall be used only for purposes of this Technical Arrangement.
- 4.2. In accordance with U.S. and French laws and regulations, the Parties may exchange equipment and materials to facilitate cooperative efforts under this Technical Arrangement. Use of such property by either Party shall be permitted only in accordance with a written equipment and materials exchange arrangement between SNL and CEG, which shall be approved by the Parties. Each such arrangement for the exchange shall contain, at minimum, the following provisions:
  - 4.2.1. The owner of the equipment and materials (the “property owner”) shall retain title to such property.

- 4.2.2. The recipient of the property (the “receiving entity”) shall maintain property control records and shall make such records available to the property owner for inspection at reasonable times.
- 4.2.3. Upon delivery of such equipment and materials from SNL to CEG, or from CEG to SNL, the receiving entity shall assume the risk and responsibility for its loss or damage, except:
  - 1) for reasonable wear and tear;
  - 2) to the extent equipment or material is consumed in carrying out the purposes of this Technical Arrangement; or
  - 3) as otherwise provided by the written equipment and materials exchange arrangement.
- 4.3. At its own expense, the receiving entity may repair or modify such equipment pursuant to the terms of the equipment and materials exchange arrangement. Any repair or modification shall not affect the title of the ownership of such property.
- 4.4. Subject to compliance with applicable laws and regulations, the receiving entity shall follow the directives of the property owner regarding the disposition of all such equipment or materials not consumed in the framework of the Technical Arrangement or previously returned to the property owner.
- 4.5. Neither Party makes any warranty of any kind with respect to equipment or materials, information, or services that may be furnished for use in connection with the activities undertaken under this Technical Arrangement.

## Article 5 - Intellectual Property Rights

### 5.1. General

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this Technical Arrangement and relevant projects. The Parties agree to notify one another as soon as possible of any inventions or copyrighted works arising under this Technical Arrangement and to seek protection for such intellectual property as soon as possible. Rights to such intellectual property shall be allocated as provided below:

### 5.1.1. Scope

- 5.1.1.1. This Article is applicable to all cooperative activities undertaken by the Parties or by the relevant entities pursuant to this Technical Arrangement, except as otherwise specifically agreed by the Parties or their relevant entities.
- 5.1.1.2. For purposes of this Technical Arrangement, “intellectual property” shall have the meaning found in Article 2 of the convention establishing the World Intellectual Property Organization, done at Stockholm July 14, 1967.
- 5.1.1.3 This Article addresses the allocation of rights and interests between the Parties. Each Party shall ensure that the other Party or relevant entities can obtain the rights to intellectual property allocated in accordance with this Article. The allocation between a Party and the relevant entities on behalf of this Party in projects, which shall be determined by the Party’s laws and regulations, shall not be altered or prejudiced by application of this Article.
- 5.1.1.4. Disputes concerning intellectual property arising under this Technical Arrangement shall be resolved in accordance with the Intellectual Property Rights Annex.

### 5.2. Allocation of Rights

- 5.2.1. Each Party, subject to the restrictions of paragraph 3 of this Article, shall be entitled to a nonexclusive, irrevocable, royalty-free license in all States to translate, reproduce, and publicly distribute scientific and technical journal articles, and publicly available reports directly arising under this Technical Arrangement. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate the names of the authors of the work unless an author explicitly declines to be named. Each Party or its relevant entities shall have the right to review a translation prior to public distribution.
- 5.2.2. Rights to all forms of intellectual property, other than those rights described in section 5.2.1. above, shall be allocated as follows:
  - 5.2.2.1. Visiting researchers, for example, scientists visiting primarily in furtherance of their education, shall receive intellectual property rights under the rules of the host institution, unless a specific agreement is or has been signed between the host and forwarding institutions. In addition, each visiting researcher named as an inventor shall be entitled to treatment as a national of the host State with regard to awards, bonuses, benefits, or any other rewards, in accordance with the rules of the host institution.

- 5.2.2.2.
- a) For intellectual property created during joint research, the Parties or their relevant entities shall jointly develop a technology management plan either prior to the start of their cooperation, for example in research areas likely to lead rapidly to industrial applications, or within a reasonable time from the time a Party becomes aware of the creation of intellectual property. The technology management plan shall consider the relevant contributions of the Parties and their relevant entities, the benefits of exclusive or non-exclusive licensing by territory or for field of use, requirements imposed by the Parties' domestic laws, and other factors deemed appropriate. If needed, the technology management plan shall be jointly modified or completed in a timely fashion, subject to the approval of both Parties or their relevant entities.
  - b) If the Parties or their relevant entities cannot agree on a joint technology management plan within a reasonable time not to exceed six months from the time a Party becomes aware of the creation of the intellectual property in question, each Party may designate one co-exclusive licensee to have world-wide rights to said intellectual property. Each Party shall notify the other two months prior to making a designation under this paragraph. When both Parties (or their licensees) exploit the intellectual property in a State, they shall share equally the reasonable cost of intellectual property protection in that State.
  - c) A specific program of research will be regarded as joint research for purposes of allocating rights to intellectual property only when it is designated as such in the relevant cooperative project, otherwise the allocation of rights to intellectual property will be in accordance with section 5.2.2.1.
  - d) In the event that either Party believes that a particular joint research project under this Technical Arrangement will lead, or has led, to the creation or furnishing of intellectual property of a type not protected by the applicable laws of one of the Parties, the Parties shall immediately hold discussions to determine the allocation of the rights to the said intellectual property; the joint activities in question will be suspended during the discussions, unless otherwise agreed by the Parties thereto. If no resolution can be reached within a three month period **from** the date of the request for discussions, the Parties shall cease the cooperation in the project in question. Notwithstanding sections 5.2.2.2.a. and b., rights to any intellectual property which has been created will be resolved in accordance with the provisions of section 5.1.1.4.

### 5.3. Business-Confidential Information

In the event that information identified in a timely fashion as business-confidential information is furnished or created under this Technical Arrangement, each Party and its relevant entities shall protect such information in accordance with applicable laws and regulations. Information may be identified as business-confidential information if a person having the information may derive an economic benefit **from** it or may obtain a competitive advantage over those who do not have it, the information is not generally known or publicly available **from** other sources, and the owner has not previously made the information available without imposing in a timely manner an obligation to keep it confidential. Without prior written consent, neither of the Parties shall disclose any business-confidential information provided by the other Party except to appropriate employees and government personnel. If expressly agreed between the Parties, business-confidential information may be disclosed to prime and subcontractors. Such disclosures shall be for use only within the scope of their contracts with the Parties relating to cooperation under the Technical Arrangement. The Parties shall impose, or shall have imposed, an obligation on those receiving such information to keep it confidential. If one of the Parties becomes aware that, under its laws or regulations, it will be, or may reasonably be expected to become, unable to meet the non-disclosure provisions, it shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

## Article 6 – Visits and Assignments

- 6.1. Each Party shall permit visits and assignments to its government establishments, agencies and laboratories, and contractor industrial facilities by personnel or agents of the other Party or by personnel or agents of the other Party's contractor(s), provided that the visit(s) is/are authorized by both Parties and the personnel or agents have appropriate security clearances and a need-to-know pursuant to this Technical Arrangement.
- 6.2. All visiting personnel shall be required to comply with security regulations of the host Party. Any information disclosed or made available to visitors shall be treated as if supplied to the Party sponsoring the visiting personnel, and shall be subject to this Technical Arrangement.
- 6.3. Requests for visits by personnel of one Party to the facility of the other Party shall conform to the established visiting procedures of the host Party.
- 6.4. Assignment of personnel shall conform to the laws and regulations of the host Party.
- 6.5. Lists of personnel of each Party to visit, on a continuing basis, facilities of the other Party shall be submitted through official channels.
- 6.6. Whenever an assignment or exchange of personnel is contemplated under Article 2.1.2., each Party shall use its best efforts to ensure that qualified personnel are selected for assignment or exchange to the other Party.

- 6.7. In accordance with its State's laws and regulations, each Party shall be responsible for the salaries, insurance, travel and living expenses of its personnel while on assignment to the other Party.
- 6.8. The receiving Party shall be required to provide assistance for accommodations and other administrative matters for the assigned staff and families of the other Party on a mutually agreeable reciprocal basis.
- 6.9. Assigned staff shall be required to conform to the general and special rules of work and safety regulations in force at the establishment of the receiving Party. Such special rules of work may include restrictions on access to sensitive or classified facilities or areas.

#### Article 7 – Funding

- 7.1. Each Party shall, subject to paragraph 2 below, bear the full costs it incurs for performing, managing, and administering its activities under this Technical Arrangement and all such costs shall be included as part of each Party's contributions to the Technical Arrangement. These costs include financial and non-financial contributions.
- 7.2. All obligations under this Technical Arrangement are subject to the availability of appropriated funds, personnel and resources.

#### Article 8 - Settlement of Disputes

Disputes between the Parties arising under or relating to this Technical Arrangement shall be resolved by consultation between the Parties.

#### Article 9 - Claims and Liabilities

For liability arising out of, or in connection with, activities undertaken in the performance of official duty in the performance and for the benefit of the Technical Arrangement, the following provisions shall apply:

- 9.1 With the exception of claims for loss of or damage to equipment or materials under Article 4 (Use of Equipment and Materials), each Party waives its claims against the other Party for injury to or death of its personnel and for damage to or loss of its property (including jointly acquired property) caused by personnel or agents (which do not include project contractors) of that other Party.
- 9.2 Claims, other than contractual claims, not covered by paragraph 9.1, shall be dealt with by each Party in accordance with its national laws.

- 9.3 The cost of damage caused to or by jointly acquired property of the Parties, where the cost of making good such damage is not recoverable from other persons, shall be dealt with by the Parties in accordance with their respective laws and regulations.
- 9.4 The Parties shall comply with their respective national laws and applicable regulations with respect to indemnification of contractors against third party liability claims.
- 9.5 Liability claims arising under any contract awarded under this Technical Arrangement shall be resolved in accordance with the provisions of the contract.

#### Article 10 - General Provisions

- 10.1. The Parties note the following existing agreements between the U.S. Secretary of Defense and the French Minister of Defense:
  - a) Industrial Security Procedures between the Secretary of Defense of the United States and the French Minister of Defense of May 21, 1985; and
  - b) Agreement between the Secretary of Defense of the Government of the United States of America and the Minister of Defense of the Government of the Republic of France Regarding the Exchange of Scientists and Engineers, of January 28, 1994.
- 10.2. Each Party shall conduct the cooperation under this Technical Arrangement in accordance with applicable domestic laws and regulations.

#### Article 11 - Duration, Amendment and Termination

- 11.1. This Technical Arrangement, which consists of 11 Articles, shall enter into force upon the last signature and shall remain in force for five (5) years. This Technical Arrangement shall be automatically renewed for further five (5) year periods unless either Party notifies the other in writing at least six months prior to the expiration of the first five-year period or any succeeding five-year period of its intent to terminate the Technical Arrangement. The Technical Arrangement may be amended in writing by the Parties.
- 11.2. This Technical Arrangement may be terminated at any time at the discretion of either Party upon six (6) months advance notification in writing by the Party seeking to terminate the Technical Arrangement. Such termination shall be without prejudice to the rights which may have accrued under this Technical Arrangement to either Party up to the date of such termination. In all cases, the obligations of Articles 8 and 9 shall continue to apply.
- 11.3. Termination or expiration of this Technical Arrangement shall not affect the rights or obligations under Article 5.

- 11.4. Joint efforts and experiments not completed at the expiration or termination of this Technical Arrangement may, upon written arrangement of the Parties, be continued until their completion under the terms of this Technical Arrangement.

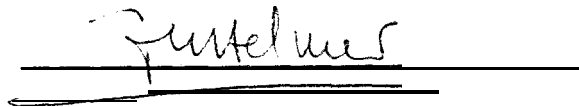
DONE in duplicate in the English and French languages, each text being equally authentic.

FOR THE DEPARTMENT OF ENERGY  
OF THE UNITED STATES OF AMERICA:

A handwritten signature in black ink, appearing to read "Thomas D. Luongo", written over a horizontal line.

Date: 7 April 00

FOR THE MINISTER OF DEFENSE  
OF THE FRENCH REPUBLIC:

A handwritten signature in black ink, appearing to read "Michel", written over a horizontal line.

Date: 9 mai 00